

## Nordic/Baltic Regional ESTH Hub e-Letter

Welcome to the latest **e-Letter**, our *unclassified* electronic publication sharing regional information, news and events. We encourage you to visit the websites of our Embassies throughout the Hub. Feel free to disseminate to your contacts. At the very end of the e-Letter you will find our featured story, offering background on shale gas.

Enjoy the read!  
Ed Canuel  
Bo Gregersen  
Jasper Alblas

### AROUND THE REGION.....

#### DENMARK

**Green Partnerships.** Ambassador Fulton led the Green Partnerships event in Washington, D.C. from September 19<sup>th</sup>-22<sup>nd</sup>. Green Partnerships is an ongoing collaboration between the U.S. Embassy in Denmark and the Confederation of Danish Industry (DI). The partnership's primary focus is building transatlantic bridges in the clean tech sector by actively pursuing and facilitating opportunities for industry collaboration. The Green Partnerships delegation consisted of leading Danish clean tech companies, Danish innovation companies, Faroese government officials and industry leaders, the American Chamber of Commerce in Denmark and the Climate Consortium. Read more [here](#) and [here](#).



**Denmark presents Arctic Strategy for the next decade.** The 58-page report "Arctic Strategy 2011-2020" was created by the former Danish government and the current Faroese and Greenlandic governments. The report's main strategic goals are to ensure a safe and secure Arctic, with sustainable growth and development. Read more [here](#). The report can be found [here](#).



**Block of ice splits off Greenland glacier.** The block of ice, four times the size of Manhattan, broke off in 2010. First photos have only come available recently. Scientists now worry that another ice block, roughly twice the size of Manhattan, is preparing to break off. Read more [here](#). (Picture: Petermann glacier in July 2011, *News.Yahoo.com*)

**Denmark levies world's first fat tax.** Denmark became the first country in the world to impose a fat tax on food. The tax will add \$2.87 per kilo (2.2 pounds) of saturated fats in a product, and is implemented to reduce the population's intake of fatty food. Read more [here](#).

#### ESTONIA

**Greater cooperation with Mitsubishi.** Estonian Justice Minister Kirsten Michal and Mitsubishi Corporation's deputy president Akinobu Ogata signed a cooperation agreement that aims to develop projects reducing greenhouse gas emission and implementing smart energy solution. The project also includes a network of speed chargers for electric cars that will be developed in 2012 and a government subsidy of up to 18,000 Euros for consumers buying an electric car. Read more [here](#).

**Estonia buys 507 electric car chargers from ABB.** Estonian state-owned export credit agency Kredex will order 507 ordinary electric car chargers from ABB AS. The chargers will be installed throughout Estonia. In addition to the ordinary chargers, Kredex will procure top-model chargers. Read more [here](#).  
(Picture: Electric car charger, *Baltic-Course.com*)



**Kuusakoski starts producing bio-fuel.** Estonian scrap metal handler AS Kuusakoski expanded in to the market of renewable energy, launching production of biofuels and waste-based fuel in Paldiski. The company intends to produce 5,000 tons of fuel by the end of this year. Read more [here](#)

**Shale gas extraction permit issued to Eesti Energia.** The Estonian Ministry of Environment issued an extraction permit to the Estonia-based energy company Eesti Energia for the Uus-Kiviõli exploration field. According to the permit, the company is entitled to mine approximately 4.2 million tons of oil shale from the field starting in 2014. Read more [here](#).

## FINLAND

**Ships release less waste water into Gulf of Finland and Baltic Sea.** According to Finland's Environmental Administration (Syke) there are dramatically less Baltic Sea spills over the past 15 years. Fewer than 20 discharges have been detected this year, while in 2001 over 100 were reported. Read more [here](#). (Picture: The Baltic Sea, *Eyeontheartic.net*)



**Finland to join electric vehicles initiative.** Finland, Denmark and Portugal have joined the Clean Energy Ministerial Electric Vehicles Initiative (EVI). The program will demonstrate and promote electric vehicles and encourage the widespread sharing of data and demonstration results. Read more [here](#).

**Helsinki cuts emissions.** Finland's capital city Helsinki reduced its greenhouse gas (GHG) emissions by 10% as compared to 1990. City buildings and various departments have been on a program to lower the level of GHG emissions. The city now plans to set more ambitious targets. Read more [here](#).

## GERMANY



**German trains to run on sun and wind.** Germany's railway company Deutsche Bahn revealed it plans to run its trains on renewable energy, after requests from consumers. The company seeks to raise the percentage of renewable energy to power trains from a current 20 percent to 28 percent in 2014, and become

carbon-free by 2050. Read more [here](#). (Picture: German train, *Planet.Ark.org*)

**Volkswagen to invest €1 Billion in renewables.** German Volkswagen will increase its planned commitment to renewable energy, to a total of almost €1 billion. The company is looking to buy an interest in two offshore wind parks. Volkswagen has set a target of reducing the amount of greenhouse gases emitted from its production plants by 40 percent over a ten year period compared with 2010. Read more [here](#).

**German renewable energy record in 2011.** Germany's Association of Energy and Water Industries (BDEW) reports that renewable energy supplied nearly 21% of the country's electricity during the first half of 2011. Wind power generated the highest share of the renewable energy with a total of 7.5%. Read more [here](#).

**Germany among EU frontrunners in developing Smart Grid technology.** According to a new EU Commission report, 11% of all EU smart grid demonstration and development projects are based in Germany. Denmark and the Netherlands are placed first and third, with 22% and 8.8% of the projects respectively. Read more [here](#).

## ICELAND

**Alcoa to reevaluate smelter project.** Alcoa is reevaluating its decision to build a smelter at Bakki. The company stated that the Gol and the State Energy Authority have been uncooperative. Minister of Industry Katrin Juliusdottir stated Alcoa was not definitive about its decision to build a smelter in the area.

**No U.S. trade sanctions against Icelandic whaling.** U.S. President Barack Obama decided not to impose trade sanctions against Iceland, despite stating that Icelandic whale hunts are undermining international efforts to preserve the whales. The President has ordered the State Department and Commerce Department to keep the whaling activities under review, while urging the government in Reykjavik to halt the practice. In addition, the President has directed the Department of State to examine Arctic cooperation projects, and where appropriate, link U.S. cooperation to the Icelandic government changing its whaling policy and abiding by the IWC moratorium on commercial whaling. Read more [here](#).

**Iceland and Russia consider joint geothermal energy projects.** According to the Icelandic President Olafur Grimsson, developing geothermal energy projects and the Northern Sea Route with Russia are a top priority for Iceland. Read more [here](#).

**Icelandic scientists discover new ocean current.** The current, which is known as the North Atlantic Jet, was first studied and described by two Icelandic Marine Research Institute scientists. The ocean current has in the past few years been studied further by the Institute, together with U.S.'s Woods Hole. The discovery could mean that the heat-salt circulation in the ocean is not as vulnerable to melting ice as previously thought. Read more [here](#).

## LATVIA

**Radio telescopes to be renovated.** Two radio telescopes in Irbene will undergo renovation over the next three years, as part of a project financed by the EU funds. The approximately €16.65 million investment will be used to develop a national research center for information, communications and signal processing (ICSP) technologies.

**2.3% increase in produced renewable energy.** The volume of produced renewable energy in 2010 rose to 48.47%, which was an increase of 2.3% compared to the previous year. The increase is primarily caused by

the construction of several new biogas power plants, which lead to a 30% increase in produced electricity from biogas. Read more [here](#).

## LITHUANIA

**Energy Ministry initiates proposal to reduce heating price.** The proposal includes giving away surplus gas from the “Lietuvos Elektrinė” power plant to combined heat and power plants. These plants produce heat and electricity. According to Energy Minister Arvydas Sekmokas, this would reduce heat prices by 13%. Read more [here](#).

## NORWAY

**Ambassador White visits Telemark's Renewable Industry Cluster.** U.S. Ambassador to Norway Barry White and Oslo's Embassy staff toured the renewable industry cluster in Telemark. They met with key political and industrial stakeholders to discuss possibilities of increased trade and R&D between Norway and the United States.

**Norway North Sea oil discovery.** Norway's Statoil discovered that two previously found North Sea oil fields are connected, and substantially bigger than previously expected. The Aldous and Avaldsnes oil discoveries together contain between 500 million and 1.2 billion barrels of oil. Read more [here](#). (Picture: Norwegian North Sea oil field, *nytimes.com*).



**Tromsø wants Arctic oil base.** The local authorities in Tromsø, the biggest city in Norway north of the Polar Circle, want to build a permanent base for oil and gas operations in the Arctic. Plans are to develop the local Grøtsund Industrial Park with 80,000 square meters of land and a 220 meter long pier. Read more [here](#).

**Solar-powered grill.** The grill (see picture) is developed by Norwegian researchers and can roast sausages at temperatures up to 100 degrees Celsius in a few minutes - using only the sun's rays. The grill's curved mirror can move so that it always receives the full potential. Read more [here](#) (in Danish). (Picture: Solar-powered grill, *ing.dk*)

## POLAND

**Poland begins work on low carbon plan for 2050.** The Polish government has issued a policy paper outlining plans to move towards a low carbon economy. The plans are presented in anticipation of a roadmap to be issued in 2013. The national program will focus on efficiency, waste management, low-carbon technologies and new models of consumption. Read more [here](#).

**Poland to trade surplus emission permits for Japan's energy technology.** Poland will exchange its AAUs (surplus emission permits) to Japan for the country's energy storage technologies, according to the Polish environment minister, Andrzej Kraszewski. Read more [here](#).



**Nuclear energy ministerial-level meeting to be held in Poland.** The meeting of the International Framework for Nuclear Energy Cooperation (IFNEC) took place on September 29 in Warsaw, Poland. The conference aims to advance cooperation among participating states to support the peaceful use of nuclear energy. The U.S. delegation was lead by Deputy Secretary of Energy Daniel Poneman. Read more [here](#).

**Warsaw hosted renewable energy congress Green Power 2011.** The two-day 3rd International Renewable Energy Congress Green Power 2011 was held in Warsaw on October 5-6. Around 700 foreign guests, including investors from Central Europe and other parts of the world, discussed the EU climate package and its influence on the economy of EU countries. Read more [here](#).

## RUSSIA

**Russian Innovative Strategy through 2020 approved.** The strategy's core goal is to increase the share of innovative companies in the economy from 9.3% to 40-50%, and the growth of Russia's share on the global hi-tech market from 0.3 to 2%. Read more [here](#) (in Russian).

**Moscow Energy Conservation Plan.** The city government of Moscow has announced a plan that, by 2020, will attempt to reduce energy consumption in the city by 40% compared to 2007 levels. The plan will cover 40,000 houses and 75,000 nonresidential buildings. Read more [here](#) (in Russian).

**Russia allocates EUR 10 million towards Arctic Council pollution prevention initiatives.** The Russian government signed an agreement allocating EUR 10 million to the implementation of Arctic Council priority projects. The agreement means that Russia is now the biggest contributor to the Arctic Council's PSI – a voluntary financing instrument. Read more [here](#).

**Russia Hosts Millennium Development Goal 6 Forum (MDG-6):** The MDG forum focused on identifying challenges facing the achievement of MDG-6 (HIV/AIDS, Tuberculosis, Malaria) in the Eastern European and Central Asian region and made recommendations on reaching them by 2015 through strengthened international cooperation. Presidential Aide Arkady Dvorkovich opened the Forum, which featured U.S. Global AIDS Coordinator Ambassador Eric Goosby, UNAIDS Executive Director Michel Sidibe, WHO Regional Director for Europe Zsuzsanna Jakab, Global Fund to Fight AIDS, Tuberculosis and Malaria, Executive Director Michel Kazatchkine and World Bank representatives.

## SWEDEN



**New environmental strategy unveiled.** In the new strategy, the Swedish government will be investing approximately \$62 million to promote Swedish environmental technology over the 2011-2014 period. Read more [here](#) (in Swedish).

**Volvo developing plug-in hybrid bus.** Volvo Buses is currently developing a plug-in hybrid bus that can drive long distances and exhaust-free on only electricity. Three busses will be tested in Gothenburg in 2012 with support by the European Union. The new type of battery and charging equipment in the buses will allow it to be charged via the electricity network. Read more [here](#). (Picture: Hybrid bus, *businesswire.com*).

**Sweden stops wolf hunting after EU criticism.** After allowing wolf hunting last year for the first time in 45 years, Sweden says it will stop its licensed hunt for wolves this year. Swedish Environment Minister Andreas Carlgren says the government has decided to stop the hunt to avoid legal proceedings in Brussels. Read more [here](#).

**Boeing and Virgin Atlantic test Swedish 'green' fuel.** Virgin Atlantic has initiated cooperation with technology company Swedish Biofuels to begin using more environmentally friendly aviation fuel. Joining in the cooperation are also companies Boeing and Lanza tech. Use of "green" fuel for commercial flights could lead to a halving of carbon dioxide emissions as compared to conventional fuel. Read more [here](#).

## EUROPEAN UNION

**Automotive industry to receive carbon credits for eco-innovations.** The European Commission has adopted regulations that will give the European automotive industry carbon credits if they fit new cars with approved 'eco-innovations' that reduce emissions. The scheme will help the industry to meet the European target of limiting CO<sub>2</sub> from new cars to an average of 130 g CO<sub>2</sub>/km by 2015. Read more [here](#).

**Varied results for EUs Sixth Environment Action Program.** According to the evaluation of the European Commission, major environmental accomplishments have been made during the past 10 years. These include the extension of the Nature 2000 network, the introduction of a chemical policy (REACH) and policy action on climate change. There is however progress to be made on implementing agreed EU objectives and rules. Read more [here](#).

**EU to develop rare earth substitutes with U.S. and Japan.** The European Union, United States and Japan will work together to find substitutes for rare earth minerals. This is in reaction to China, which has cut its rare earth minerals global exports. Under the proposal, researchers from these countries will coordinate their efforts to cut down their dependence on the minerals. China has recently announced plans to halt production at three major mines. Read more [here](#).

**EU and U.S. pledge greater cooperation against illegal fishing.** The agreement between the EU and U.S. establishes a new system for exchanging information on illegal and unregulated fishing. Both sides also pledged to step up monitoring and enforcement. Read more [here](#).

**New EU cars to dial emergency help in accidents.** All new cars in the European Union will have an automatic emergency call system installed from 2015. The eCall system will automatically alert Europe's emergency number, 112, in case of a serious accident. Read more [here](#).

**Barroso sets out his wish list for Durban climate conference.** A speech made by President of the European Commission's José Barroso, at the Leaders' Dialogue on Climate Change in New York, has been published. He stated the need for Durban to produce a legal framework which brings together all parties to the both UNFCCC and to the Kyoto Protocol. Read more [here](#).

**European cars emit less CO<sub>2</sub> in 2010.** New cars sold in 2010 were 4% more energy efficient, emitted 4% less CO<sub>2</sub> and were 2.5% less expensive than the previous year. These findings contradict claims by the industry that binding energy efficiency targets would make new cars "unaffordable." Read more [here](#).

## UNITED STATES

**Global Methane Initiative (GMI) Update.** The GMI, in cooperation with the Government of Poland, hosted a Partnership-Wide meeting in Krakow, from October 12<sup>th</sup>-14<sup>th</sup>. In addition to plenary sessions about

methane reduction and capture issues, the event featured sector-specific technical and policy meetings focused on reducing methane from agriculture, oil and gas, landfills, coal, and wastewater. The Steering Committee approved Norway's request to join GMI--Norway became the 41st GMI Partner and will participate in the Oil & Gas Subcommittee. The Steering Committee supported Canada's offer to host next the Expo in Vancouver (anticipated February 2013). More than 170 people attended with representation from nearly 31 countries. For more about the GMI, read [here](#)

**Vice President Biden announces new private sector backing for pioneering energy companies.** Five innovative companies that received seed funding from the DOE's Advanced Research Projects Agency-Energy (ARPA-E) initiative have now attracted more than \$100 million in outside private capital investment. The five companies received between \$1.5 million and \$6 million each from ARPA-E to develop advanced grid scale batteries or innovative new approaches to biofuels or waste heat recovery. Read more [here](#).

**DOE-Backed batteries plant opens in Florida.** DOE and Saft America celebrated the opening of the company's advanced lithium-ion battery factory in Jacksonville, Florida. The factory is expected to produce enough battery power each year to supply more than 37,000 electric-drive vehicles. Saft America was supported by a \$95.5 million DOE grant under the American Recovery and Reinvestment Act in 2009. Read more [here](#).

**USDA announces smart grid initiative.** Agriculture Secretary Vilsack announced that the USDA will fund \$900 million of smart grid technologies and improvements to generation and transmission facilities. The initiative is part of the Administration's commitment to support energy efficiency and economic growth in rural America. Read more [here](#).

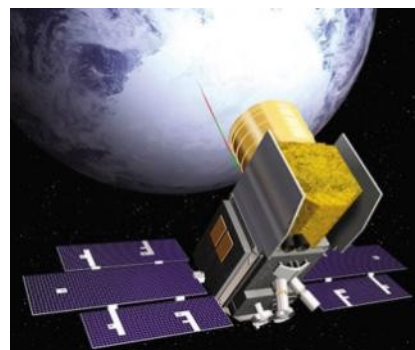


**Navy assesses strategic demands in Arctic.** The U.S. Navy has finished its latest assessment of the Arctic region. Increased seasonal melting of sea ice is opening the region and creating opportunities for oil and gas exploration, maritime shipping, commercial fishing and tourism. The assessment is part of a five-year plan, released in May 2009, to guide Navy policy, actions and investment regarding the Arctic. Read more [here](#). (Picture: U.S. Submarine breaking through ice, *Stripes.com*).

**DoE report examines U.S. biomass feedstock potential.** The U.S. Department of Energy released a report detailing the nation's capacity to produce a billion dry tons of biomass resources annually for energy uses without impacting farm and forest products. The report's findings demonstrate that increases in biomass-derived energy sources can be produced in a sustainable manner. Read more [here](#).

**Major initiative announced to encourage biofuels.** The U.S. Departments of Agriculture, Energy and Navy will invest up to \$510 million during the next three years to produce drop-in aviation and marine biofuels to power military and commercial transportation. Drop-in biofuels are fuels that can serve as direct replacements or supplements to existing gasoline, diesel and jet fuels. Read more [here](#).

**NASA selects Orbital for ICESat-2.** NASA's Goddard Space Flight Center has awarded a \$135 million contract to Orbital Sciences Cooperation to design, build and test the Ice, Cloud and Land Elevation Satellite-2 (ICESAT-2). The satellite is scheduled for launch in 2016 and the successor to the original ICESat satellite. Read more [here](#). (Picture: Artist's impression ICESat-2, *nasa.gov*).



**Ford and SunPower to pair rooftop solar system with new EV.** The partnership allows Ford dealers to combine the sale of the new Ford Focus EV with a discounted rooftop solar system to recharge the vehicle's battery. The rooftop system is engineered to provide power for about 1000 miles of travel per month. Read more [here](#).

**Akron and Greenstar to build plastic-into-oil recycling facility.** The city of Akron in Ohio will, together with Greenstar Recycling, establish a recycling processing facility which can convert plastic into synthetic crude oil. In addition to producing oil with low sulfur content, the facility will increase recycling activities in the city and create at least 45 jobs. Read more [here](#).

**World's first tri-generation fuel cell energy station in California.** The fuel cell is located at a wastewater treatment plant in Fountain Valley, California. The fuel cell is a combined heat, hydrogen and power system that uses biogas to co-produce hydrogen in addition to electricity and heat. The hydrogen produced by the system is sent to a hydrogen fueling station that will be open to the public. Read more [here](#).

**UPS buys 100 electric delivery vehicles.** UPS has purchased the vehicles from Electric Vehicles International. According to the company, the purchase marks the largest deployment of zero-emission delivery vehicles in California. Once deployed, the vehicles will reduce the consumption of fuel by 125,000 gallons annually. Read more [here](#).

**First US coal plant to meet lower EPA GHG limits approved.** To reduce emissions, the Michigan coal plant will burn 20% biomass. The Obama Administration's EPA climate permit rule took effect in January 2011, limiting greenhouse gas emissions from coal plants for the first time in the U.S. Read more [here](#).

**Google discloses energy use.** The company has disclosed that it continuously uses enough electricity to power 200,000 homes. Google defends its energy use by stating that users reduce their energy consumption the search engine. For example, Google surfers do not drive to libraries and thus curb emissions. Read more [here](#).

**Dow Jones' sustainability index.** In the U.S. trading regime, the Dow-Jones ranks companies based on a sustainability index. According to the Dow Jones index, the Danish company Vestas is now the most sustainable company in the world in the segment Renewable Energy Equipment. The Dow Jones Sustainability Index uses parameters such as social, economic, environment and health & safety initiatives to score listed industrial companies. Read more [here](#).

**University of Florida installs solar dock.** Residents of University of Florida's Diamond Village can now work on laptops or plug in other personal electronic while outdoors at a high-tech picnic table powered by the energy of the sun. The solar panels on a metal umbrella roof collect energy that is stored in battery packs within the unit. Read more [here](#). (Picture: Solar dock, [news.ufl.edu](#)).



**Arctic ice near all-time low.** The U.S. based National Snow and Ice Data Center has said that Arctic sea ice is about as low as it has ever been. These findings correspond with earlier findings by a German research team. There is now about one-third less ice in the Arctic than the 1979-2000 average. Read more [here](#) and [here](#). (Picture: Polar bear, [economist.com](#)).



## EVENTS

**April 17 – 28, 2012.** University of California Merced, Yosemite NP. Third National Parks Institute Executive Leadership Seminar. Scholarships are available. Read more [here](#).

## FEATURED STORY: SHALE GAS

The potential for natural gas production in the U.S. from hydrocarbon-rich shale formations, known as “shale gas,” has grown dramatically in recent years. Shale gas development may significantly enhance U.S. energy security and help reduce greenhouse gas pollution.

### ***What is Shale Gas?***

Shale gas refers to natural gas that is trapped within shale formations, often referred to as “shale plays,” which are fine grained sedimentary rocks. Shale gas production in commercial quantities requires fracturing sedimentary rock to provide permeability. Over the past decade, the combination of horizontal drilling and hydraulic fracturing has allowed access to large volumes of shale gas that were previously uneconomical to extract.

Shale gas critics have asserted that the expense of “fracking,” or the hydraulic fracturing treatments required to produce shale gas tend to cost more to produce than gas from conventional wells. Shale gas proponents note, however, that such costs are often offset by the low risk of shale-gas wells.

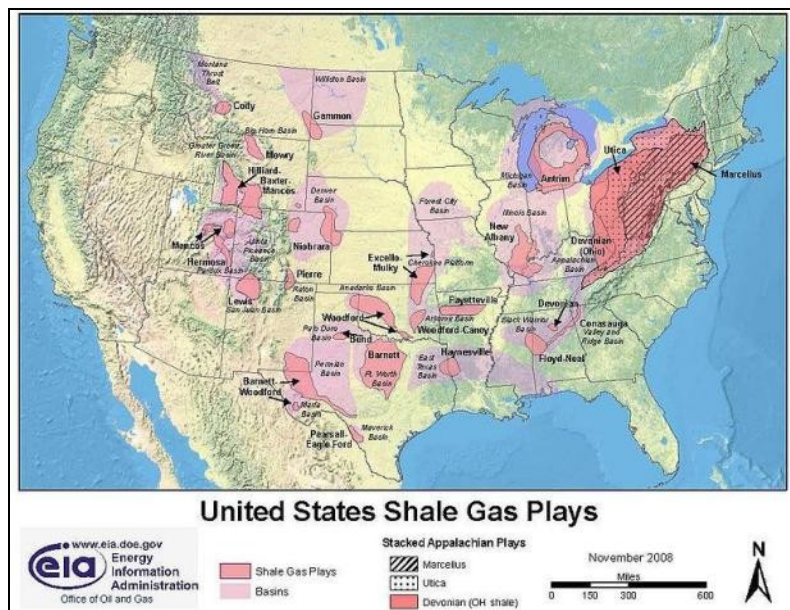
### ***Why is Shale Gas Important?***

As conventional gas reserves decline, shale gas has emerged as a potential new source of gas. Through 1990-2008 shale gas production expanded dramatically, from 1.4 % of the total U.S. gas supply to 14.3%. The U.S. Energy Information Administration Annual Energy Outlook 2011 asserts that shale gas production is expected to continue to rapidly increase and constitute 46% of U.S. total natural gas supply by 2035. Along with increased shale gas exploration, concerns about its potential impacts on drinking water resources, public health and environmental impacts in the vicinity of these facilities have risen.

There are some disagreements as to whether shale gas development will help reduce greenhouse gas emissions or if extraction and use of shale gas results in the release of more greenhouse gases than conventional natural gas, producing emissions as much as (or more than) those of oil or coal.

### ***Potential Environmental Consequences***

Dominating the U.S. energy debate is fear that fracking causes water and air pollution. Fracking involves extracting gas using high-pressure fluid injections to unleash gas. Through hydraulic fracturing, liquid is pumped under high pressure to crack rocks and release gas trapped in the shale formation. The liquid is comprised of water and chemicals that facilitate the underground fracturing process. While 50% to 70% of the waste water is recovered and stored in above-ground ponds, concerns arise that the remaining water is left in the earth leading to potential contamination of groundwater aquifers. A subcommittee of the DOE’s Secretary of Energy Advisory Board (SEAB) published a report in August 2011, which includes recommendations to address the safety and environmental performance of shale gas production. The Subcommittee shares the prevailing view that the risk of fracturing fluid leakage into drinking water sources through fractures made in deep shale reservoirs is remote. The EPA has launched research to improve



understanding of shale gas risks, with an evaluation study estimated to be completed by 2014.

### ***Shale Gas in the U.S.***

As noted in the map below (*eia.gov*), the nation's shale gas reservoirs are spread across the Northeast, in the upper Midwest, under Texas, Louisiana, Oklahoma and Arkansas; and north into the Rocky Mountain region. The potential for production in the known onshore shale basins, coupled with other unconventional gas plays, is predicted to contribute significantly to the U.S.' domestic energy outlook. Shale gas resource

estimates are likely to increase over time as experience is gained in producing shale gas and as recovery technologies improve.

### ***Shale Gas in Europe***

A recent report by the US Energy Information Administration estimated the technically recoverable shale gas in Europe to be 618 trillion cubic feet (Tcf). The U.S., by comparison, is estimated to have 827 Tcf. While Europe has yet to produce shale gas, the success of shale gas in North America has prompted geologists in a number of European countries to examine the productive possibilities. Potential shale gas reserves in Europe are located in northeast France, northern Europe, Poland, Germany and the Netherlands. However, France's lower house of parliament approved a bill that would ban shale gas drilling due to environmental concerns.

Additionally, a recent U.S. Department of Energy report revealed that the largest reserves of shale gas in Europe are in Poland, estimating the reserves to hold about 187 Tcf of shale gas. Chevron plans to drill its first well in Poland later this year, while ExxonMobil has completed drilling its sixth shale gas well in northwest Germany since 2008. Shell is also investigating shale gas resources in Sweden.

### ***Further Reading***

EIA About Shale Gas [http://www.eia.gov/energy\\_in\\_brief/about\\_shale\\_gas.cfm](http://www.eia.gov/energy_in_brief/about_shale_gas.cfm)

Analysis and Projections <http://www.eia.gov/analysis/studies/usshalegas/>

EPA Hydraulic Fracturing Research Study <http://www.epa.gov/safewater/uic/pdfs/hfresearchstudyfs.pdf>

Drilling Animations <http://www.askchesapeake.com/Video/Pages/information.aspx>

Shale gas in Poland [http://poland.usembassy.gov/gas\\_release.html](http://poland.usembassy.gov/gas_release.html)



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